

Axis JPEG Format – Comment Fields

TABLE OF CONTENTS

- **DOCUMENT HISTORY**
- **1. OVERVIEW**
- **2. JPEG**
 - **2.1 Header**
 - **2.2 Comment Fields**
 - **2.2.1 Product Information**
 - **2.2.2 Time Stamp**
 - **2.2.3 Trigger Data**

DOCUMENT HISTORY

2004-Aug-26 1.00	Initial version.
2004-Sep-14 1.01	Changed description of unit time.
2007-Jan-03 1.02	Added notes about Unit Time. Added note about time stamp comment in products without RTC.

1. OVERVIEW

This document specifies the format of the comment fields in the JPEG header from JPEG images generated from Axis video products based on the Axis Artpec-2 chip.

The comments can contain for example product information, time stamp and trigger data.

2. JPEG

The Axis Artpec-2 Device Driver Module can create JPEG images with different resolutions, compression, scaling, rotation, text overlays, image overlays, and with optional JFIF and comment header markers. The JPEG images are coded as non-differential Huffman coded baseline sequential DCT (4:2:2) images. More information about the JPEG format can be found in the JPEG standard.

2.1 Header

Marker	Value	Size (bytes)	Description
SOI	0xFF,0xD8	2	Start Of Image
APP0 ¹	0xFF,0xE0	18	JFIF (JPEG File Interchange Format)
COM	0xFF,0xFE	17	Product Information Comment
COM	0xFF,0xFE	17	Time Stamp Comment
COM ¹	0xFF,0xFE	6...262	Trigger Data Comment
DQT	0xFF,0xDB	69	Quantization Table - Luminance (Y)
DQT ²	0xFF,0xDB	69	Quantization Table - Chrominance (Cb/Cr)
SOF	0xFF,0xC0	19/13	Start Of Frame (19 color/13 black&white)
DHT	0xFF,0xC4	33	Huffman Table - Luminance (Y) - DC Diff
DHT	0xFF,0xC4	183	Huffman Table - Luminance (Y) - AC Coeff
DHT ²	0xFF,0xC4	33	Huffman Table - Chrominance (Cb/Cr) - DC Diff
DHT ²	0xFF,0xC4	183	Huffman Table - Chrominance (Cb/Cr) - AC Coeff

SOS	0xFF,0xDA	14/10	Start Of Scan (14 color/13 black&white)
...	Huffman coded image data
EOF	0xFF,0xD9	2	End Of Image

¹ Optional marker segment.

² Only present in color images.

2.2 Comment Fields

Note that the time stamp comment is not available in products without real-time clock, please check the product data sheet. Trigger data comments are optional.

Axis ID	Description
0x0A,0x00	Product information comment
0x0A,0x01	Time stamp comment
0x0A,0x03	Trigger data comment

2.2.1 Product Information

In the product information comment information such as Hardware ID, firmware version and serial number can be found.

Value	Size (bytes)	Description
0xFF,0xFE	2	Comment marker
0x00,0x0F	2	Length (15)
0x0A	1	Axis ID (10)
0x00	1	Product Information ID (0)
0x##,0x##	2	Hardware ID (0...65535)
0x##,0x##	2	Firmware Version (0x##.0x##)
0x##	1	Firmware Bulid Nbr (0...255)
0x00,0x40,0x8c,0x##,0x##,0x##	6	SerialNbr(00:40:8c:##:##:##)

2.2.2 Time Stamp

The time stamp comment contains information about the user as well as the unit time.

Note: Unit Time is from firmware version 4.40 no longer valid. The Unit Time will in this revision contain the same information as the User Time.

Value	Size (bytes)	Description
0xFF,0xFE	2	Comment marker
0x00,0x0F	2	Length (15)
0x0A	1	Axis ID (10)
0x01	1	Time Stamp ID (1)
0x##,0x##,0x##,0x##	4	User Time - seconds since EPOCH (0...2 ³² -1)
0x##	1	User Time - 1/100 seconds (0...99)
0x##,0x##,0x##,0x##	4	Unit Time - seconds since the unit was produced (0...2 ³² -1). Note: from fw. 4.40 this value is equal to User Time
0x##	1	Unit Time - 1/100 seconds (0...99). Note: from fw. 4.40 this value is equal to User Time.

0x##	1	Unit Time - invalid (1), valid (0). Note: from fw. 4.40 this value has no purpose anymore.
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2.2.3 Trigger Data Comment (optional)

The trigger data comment is an optional comment included in some products. See Trigger Data document for more information.

Value	Size (bytes)	Description
0xFF,0xFE	2	Comment marker
0x##,0x##	2	Length (4...260)
0x0A	1	Axis ID (10)
0x03	1	Trigger Data ID (0x03)
...	Length - 4	The trigger data